ON DISEASES

OF THE

VESICULÆ SEMINALES:

AND

THEIR ASSOCIATED ORGANS.

WITH SPECIAL REFERENCE TO THE

MORBID SECRETIONS OF THE PROSTATIC AND URETHRAL MUCOUS MEMBRANE.

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PREFACE.

THE reluctance shown by the medical profession to enter upon the consideration of the affections described in the following pages is gradually passing away; but the effect of the want of attention to these important subjects by those qualified to undertake their examination, which has hitherto existed, is shown in the meagre information with regard to the true nature and pathology of the diseases which we at present possess.

Several of the works which have been written on the subject are directed almost exclusively to the treatment of the symptoms of the disease, without giving attention to the condition of the structures whence those symptoms proceed, and without considering the necessity of making the functions of the affected organs a part of the investigation of their diseases.

The ground which I have selected has proved to be unbroken in many points, more particularly in that having reference to a systematic classification. A method of arranging the various and contradictory symptoms of spermatorrhœa has been much wanted, and that which I now advance, if not entirely adopted, will I hope, nevertheless, lead to a better understanding of the subject.

If my views differ in some degree from the observations of others, it is not that I have any intention of putting forward special theories; but that the facts and suggestions expressed in these pages have risen forcibly and convincingly to my mind, while contemplating the symptoms presented by individual cases.

In submitting the following pages to publication, I have been guided by the desire to enlarge our knowledge of the different varieties of this distressing disease. Whether that object has been gained must be left to the judgment of those into whose hands this treatise may fall, and who may feel inclined to interpret the phenomena of spermatorrhœa by the illustrations which it contains.

I have thought it undesirable to lengthen this work by the publication of the cases, from which my opinions as to the nature of spermatorrhœa have been deduced. But at some future time, I may resolve to give those cases to the profession, either in full or in abstract, founded on a careful analysis, as may appear best suited to convey information, when the opportunity and inducement occur.

55, Upper Charlotte Street,
Fitzroy Square.
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ON SPERMATORRHŒA.

CHAPTER I.

INTRODUCTORY REMARKS.

IN mentally weighing the relative dependence of the various pathological phenomena or symptoms, which attend upon a case of spermatorrhœa, I have found it often difficult to account satisfactorily for the opposite conditions which presented themselves during the progress of the disease. It frequently happened, that the existing symptoms manifested but little proportion to the real and assignable cause; and that the cause when discovered might not unreasonably be looked upon as insufficient for the production of so extensive and so important a sequence of morbid symptoms.

With the view, therefore, of being able to comprehend fully the series of unexpected effects of an ascertained cause which accompany this disease, I have considered it expedient to examine, step by step, the phenomena which present themselves during its gradual development; such phenomena being proved to depend on pathological alterations in the structures involved in the production and continuance of the disease. These effects are usually presented to the medical man only after a certain duration, and when in consequence of their prolonged continuance they may be taken to have acquired an existence separate from, and independent of, their original and primary cause.

The plan I propose to follow in investigating the subject of spermatorrhœa is, to take a short review of the functions belonging to the generative system; to compare these functions as they exist in health with their state in disease; to examine microscopically the physical conditions of the secreted fluids; and to ascertain as far as possible, the relative chemical dependencies of the generative secretions. A rigorous adherence to this plan of weighing the observations furnished by the disease will lead us by degrees to a complete understanding of the intricate web of phenomena by which it is surrounded, and elucidate with clearness its pathology, causes, and symptoms. We shall thus be prepared to enter upon the difficult field of treatment, with the assurance of correct views as a guide to prospective success.

The disease depends for its more essential features on the nature of the secretion of the generative organs; the relative amount of that secretion; its qualities; and the state, whether of irritation or otherwise, of the organs concerned in its production. We therefore perceive clearly the importance of the symptoms we have to consider and investigate.

The cure of spermatorrhœa is rendered difficult in proportion to the number of the organs, or parts of organs, involved in disease. Irregularities of secretion of the different organs, and excess in the relative proportions of such secretions, constitute distinct forms of spermatorrhœa, irrespective altogether of actual organic changes in the structures themselves.

The semen in its healthy state is a compound fluid, and its component parts bear a determinate proportion to each other. These component parts are collected from different points to constitute a mass, the varying qualities and bulk of which thus become the evidence of the pathological conditions of the genital structures. Diseases of these structures do not affect the general health in a like degree, because the difference of their influence in exhausting the vital power is modified by the relative amount of excitement that each structure exerts over the nervous system.

The importance of considering the subject in this way struck me forcibly while studying the progress of spermatorrhœa in a case where the removal of the most important of the organs of generation—the testicles—failed in curing the disease. This circumstance first led me to the supposition of the actual independence and separate action of the different portions of the apparatus, and the investigations I have since made with the view of elucidating this particular point, have fully confirmed me in the opinion. The case throughout affords an illustration of the views I entertain, and taking it as my text, the confusion of having to refer to isolated portions of several other cases will be avoided. For this reason, therefore, independent of the real interest attached to the case, I hope to be excused for entering fully into its detail.

A gentleman of imaginative and excitable temperament, educated for the medical profession, became the victim of self-abuse, brought on by bad example at school. The practice was indulged in from time to time until the age of twenty, and resulted in the production of a permanent and continuous discharge of seminal fluid from the urethra, attended with frequent spasmodic emissions. While in this state he fell into the hands of an irregular practitioner, who, acting on the empirical and mischievous notion, that if one drug did not succeed another might, dosed him with every possible kind of nostrum. The result of this course, as might be expected, was a severe aggravation of the disease. He became the patient successively of three or four medical men, without experiencing any relief, and then placed himself under the treatment of an eminent surgeon, who advised exercise, to the neglect of all effective remedial treatment. Exercise as a curative medicine, proved equally abortive with ill-timed and ill-suited pharmaceutical remedies, and he again sought surgical aid, this time selecting a gentleman of high standing in the profession, who recommended marriage as the only panacea left.

Finding the methods of treatment hitherto suggested had invariably a tendency to aggravate rather than relieve his symptoms, the idea of a complete eradication of his disease, by the removal of the supposed source of the morbid phenomena,—namely, the testicles, occurred to his mind. After a good deal of persuasion, he induced Sir Astley Cooper to undertake this operation, and the left testicle was accordingly removed. The patient was however deceived in his hope, and in a letter to me he says, "After the cessation of the inflammatory action, the disease did not appear to be in the least altered by the operation."

Being disappointed as to the result of this heroic method of treatment, he submitted, under another surgeon, to the hardly less severe operation of cauterization of the urethra; this was repeated several times. The employment of the caustic plan, was not followed by any useful results, nor by any alleviation of his symptoms.

Keeping his mind constantly directed to the subject, this gentleman became persuaded in the idea, that by sacrificing the remaining testicle, he would certainly be relieved from a malady most irksome to him, and ill-requiting the advantages of a questionable virility. Much opposition was offered to this proposal by the surgeon whom he consulted, but without changing his determination, and his urgent request was complied with, under my observation, in 1853. It was imagined that this operation must necessarily prove successful, and for a few weeks, during the time that the irritation occasioned by the wound remained, it appeared to be so. After that time the spermatorrhœa reappeared, apparently with the same degree of activity as before: erections and emissions, both nocturnal and diurnal, returned, but the ejected fluid was evidently less in quantity, and altered in its quality. The patient's health now became more impaired than it had heretofore been ; he experienced great debility, suffered very much from depression of spirits, and his mind lost its capability of concentration. He also began to give up hope ; but always fertile in imagination, he conceived the notion that the true seat of the disease must have been mistaken, and judging from certain sensations which he now experienced, that it was to a great extent, if not entirely referrible, not to the testicles, as he had heretofore imagined, but to the prostate gland.

On this supposition it was proposed to establish one or more issues in the perineum ; a fold of skin, midway between the anus and commencement of the scrotum, was pinched up, and transfixed by a bistoury, and a piece of potassa fusa introduced into the wound, and lodged beneath the skin. The effect of this proceeding was the formation of a slough, half an inch square, and about the same in depth. The slough separated in ten or twelve days, discharged freely for a time, and in a few weeks was completely healed. The patient experienced so much benefit from this plan, that three months later he was desirous of having the operation repeated.

An incision was made as before, but rather deeper, and posterior to the former on the left side of the raphé. The local effect was more extensive, but, as in the previous instance, no untoward symptoms resulted. A few weeks subsequently a similar issue was made, to the right of the raphé. The operations were almost painless, being performed under the partial influence of chloroform.

It is now nearly twelve months since the last issue was entirely healed, and the condition of the patient is thus far satisfactory. He has gained flesh and strength; he feels light and active; enjoys exercise; considers his mind better qualified for occupation than has been the case for several years past; has recovered the colour of his cheeks, and presents altogether a fresh and healthy appearance. He still has erections occasionally in the night, and sometimes in the morning. Distinct emissions continue to take place, but at long intervals, the fluid being considerably less in quantity, thin and transparent, and presenting no admixture of the usual milky secretion of the prostate gland. During the whole of the time subsequent to the formation of the first issue he has pursued no medical treatment, except that requisite to prepare him for the operations;

therefore to the latter alone must be attributed his improvement.

This curious, and, in many points of view, very interesting case, furnishes a means of distinguishing the separate functions of the generative organs, of studying the influence of their morbid actions on the general system, of diagnosing with a certain accuracy the situation and degree of the irritation which accompanies the disease, and the relative dependence on each other of the various structures involved. Whatever amount of excessive action may have disturbed the functions of the genital organs was not diminished by taking away the supposed cause, but was rather concentrated with increased intensity in the vesiculæ seminales after the removal of the testicles. And the disease, instead of being checked, became as it were perpetuated by the continuance of the irritation; the vesiculæ seminales being, and becoming still more, a source of derivation of the continued and exhausting discharges. Judging from the results of the removal of the testicles, it is evident also that they could not have been the primary seat of the disease, and that the erections and emissions arose, not from the presence of seminal fluid in them, but from over activity in the vesiculæ seminales, as is evidenced in the return and continuance of the disease, after the cessation of the counter-irritation following the operations.

Erection is shown by this case to be, not necessarily the result of the presence of seminal fluid in the testicles, but to be even independent of those organs. Congestion of the vessels of the penis, and consequent erection, may arise from several different causes, morbid or natural, and entirely independent of the functions of the generative system. In eunuchs these phenomena are exemplified, though the functional power of the testicles has never been present. Erection, and a kind of modified emission, take place in them, in the same manner as in the patient whose case I have just narrated. The vesiculæ are subjected to the spasmodic contraction which ejects their contents under the influence of excitement, and this, as in the normal condition of the organs, is accompanied by a certain amount of erection and sensation. The quality of virility is alone lost. Questions might arise, to which these known facts would supply an answer of considerable importance; for example, that the existence of erection and emission is no proof that a disease affecting the testicles is not therefore of a malignant character.

It is with a conviction of the necessity for a more complete individualization and classification of the symptoms of spermatorrhœa that I have given my attention to the elucidation of the subject. I have endeavoured as far as possible to make out the relative dependence of the numerous phenomena exhibited by the symptoms of the disease, and to show that the mere cursory examination and treatment of a few of its prominent symptoms will hardly be likely to lead to an alleviation of the disease, and will do little towards establishing a scientific foundation for supporting a correct principle of cure.

CHAPTER II.

COMPOSITION OF THE SEMEN, FUNCTIONAL, CHEMICAL, AND MICROSCOPICAL.

THE seminal fluid, or semen, when poured out from the urethra, is a semi-opaque, starch-like, compound fluid; sometimes yellowish, like cream, and at other times of a greenish white tint. It is made up of the secretions of the testicles, vesiculæ seminales, prostate gland, and Cowper's glands, and mucus of the urethra, the latter being, as a component principle, merely accidental; floating in it are also to be found a greater or less number of epithelial scales. The chief bulk of the seminal mass consists of transparent ovoid bodies, more dense than the fluid that surrounds them. These bodies are the production of the vesiculæ seminales, receiving their form from the sacculi of those organs, in which they are moulded during the progress of gradual inspissation.

In a healthy condition the secretions derived from these separate organs bear a relative proportion to each other; that of the vesiculæ seminales amounting to about four-sevenths of the whole; that of the testicles and vasa deferentia to about one-seventh; and the remainder consisting of the products of the prostate gland, Cowper's glands, and mucous membrane of the urethra. The average quantity of semen expelled at each emission is about half an ounce, but this quantity, as well as the relative proportions of its composition, is not always the same; both depend very much on the perfection of healthy action of the various parts whence they are derived.

I deduce these proportions, not only from the manifest differences of quantity in the component parts of the fluid, but also from the diminution of the secretion occasioned by the removal of the testicles, and destruction of the other organs. The proportions are liable to variation from the circumstance, that irritation may arise in one or more of the structures without affecting the others; and as such irritation would cause an increased secretion of a particular kind, it is evident that the composition of the fluid must undergo a corresponding alteration. The quantity also varies considerably with the constitution of the individual—in one being abundant, in others below the average, though neither state is incompatible with vigorous health. In certain diseased states, also, there is a largely increased secretion, depending simply upon irritable action. On the other hand, there may be a diminution of secretion, arising from an atonic condition of the organs, and amounting to almost complete suppression.

The chemical composition of the seminal fluid, as ascertained by Vauquelin, consists, according to his latest analysis, of:—

Water	90	parts.
Mucus	6	,,
Phosphate of lime	3	,,
Phosphate of soda	1	,,
	100	

When healthy semen is first emitted it has a neutral reaction, which appears to be due to the presence of the prostatic fluid, holding in suspension and solution a large quantity of the phosphates of lime and soda. While the fluid continues warm, the salts are partially retained in solution; but on cooling, and with slight concentration, crystals of the compound phosphate make their appearance, either in the form of long, transparent, colourless prisms, thick in the middle and tapering slightly to either extremity, or springing in abundance from a central point, and assuming the stellate form. The milky appearance of the secretion arises from the presence of minute granules, which float about in the fluid in vast numbers, and remain suspended in it by virtue of its viscidity. These granules are more or less abundant in different states of health, and relatively to the activity of function of the prostate gland, and consist of phosphate of lime without any addition of the salt of soda, on which the greater transparency and solubility of the crystals depends. The purpose of this large production of the granular phosphate of lime is, I believe, to sustain the neutral reagency of the fluid.

The ducts, or so-called cells of the prostate gland, being lined by the genito-urinary mucous membrane, have been considered as furnishing a secretion identical with that membrane, and therefore unnecessary to fecundity. The unsoundness of this opinion is evident when applied to the other glands of the body, inasmuch as the lining membranes of all glandular organs are simple inversions, variously ramified, of the same mucous membrane, but the secretions of the various glands differ very materially from those of the parent and adjacent mucous membrane. Glands have a peculiar secretion accommodated to their situation and purpose; and the purpose assignable to the secretion of the prostate gland, although not of an essentially fecundating nature, is one, of effecting a condition necessary to the fecundating action of the seminal fluid. The secretion of the mucous membrane of the urethra is usually acid, but at times an alkaline reagency predominates, arising from a peculiar pathological condition of that membrane. When either the acid or alkaline reaction is in excess, a deterioration of the qualities of the fecundating fluid is likely to happen, which deterioration, by destroying the spermatozoa, will at the same time very probably destroy its fertilizing quality. Conditions of excessive acid and alkaline secretion have been shown to be not uncommon in the mucous membrane of the vagina and uterus, and to these conditions sterility is no doubt often to be ascribed.

The mucus secreted by the prostate gland is charged with more or less of the phosphates of lime and soda, and it is secreted and poured out in a situation where the peculiar properties of its neutralizing salts are likely to be made available for an immediate use. I cannot therefore believe that this secretion is purposeless in reference to fertilization, or that it merely supplies an additional portion of mucus; nor that in that situation the salts are simply the excretion of effete matter. For these reasons, then, it appears to me, that the special office it has to perform is that of counteracting the injurious effects likely to arise from the presence of the abnormal acid and alkaline conditions of the secretion of that portion of the mucous membrane appropriated for the reception and conveyance of the seminal fluid. Thus, though not actually taking a primary and direct part in the act of fecundation, it nevertheless serves a secondary office so important, as to make that function depend very materially on its presence.

In a diseased atonic state of the prostate gland, the action of the organ is insufficient to expel the secreted salts, and thence arises a tendency to the formation of calculi in its cellules, marking a peculiar condition of the mucous membrane.

The secretion of the vesiculæ seminales is mucilaginous and transparent, containing ovoid bodies of pure condensed mucus, floating in a small quantity of the same mucous substance in a more fluid state. When mingled with the mass of the semen, these bodies float on account of their less specific gravity. Their state of condensation alters, however, when the secretion is allowed to stand exposed to the air for a few hours; the ovoid bodies slowly dissolve, and the resulting fluid diffuses itself equally through the mass of the semen, the denser matters subsiding gradually to the bottom.

A consideration of function in relation with the fact of this gradual solution offers an interesting suggestion. It would appear as if the vesiculæ were intended to supply a fluid of light specific gravity, by which the vitality and freedom of the spermatozoa may be longer sustained in their altered situation, and their presence rendered more effective in the process of impregnation. A continuous resolution of the condensed mucus is thus made to afford a means of preserving, during a much longer time than would otherwise be the case, a relative condition of media favourable, if not indeed necessary, to the proper accomplishment of impregnation.

It is a general belief that the fluid of the testicles is continually secreted, and that when the tubuli become overcharged, the excess is conveyed along the vas deferens, and, passing thence by a retrograde current into the vesiculæ seminales, remains accumulated there until removed by emission. There can be no doubt that the tubuli are capable of a certain degree of expansion, and that they are able to accommodate themselves to the amount of secretion produced at any time during a healthy condition of the organs. There does not appear to be a necessity for supposing an accumulation of seminal fluid beyond an amount sufficient for the nutrition and elimination of the spermatozoa. The circumstances favourable to its production, and requiring its presence, are such as to cause an amount of activity sufficient for the immediate secretion of as much seminal fluid as is demanded for the occasion, in the same way that obtains for the secretion of other glands. Again, the secretions of the vesiculæ and testicles are materially different in qualities and appearance, which could not be the case were they intermingled in the vesiculæ seminales in the manner supposed.

The distinguishing character of the testicular fluid is the presence of spermatozoa. A carefully conducted search has never enabled me to detect spermatozoa in the vesicular mucus; neither does the latter present the milky appearance which the secretion of the testicle possesses. I am satisfied, therefore, that the opinion of the vesiculæ being receptacles for a superabundant secretion from the testicle is erroneous. The great nervous excitability of the testicles, placed as they are under the immediate domination of the brain, enables them to effect their secretion at the instant required,—that is to say, immediately before, and during the act of coition, and to produce their proper contribution of impregnating fluid. The only appearance of accumulation is that observed in the vesiculæ—namely, in the amount of condensation which takes place in the mucus while it remains in them. This is certainly evident in an alteration of density, but it results, not from excessive accumulation of the secretion, but from the inspissation always going on by exosmosis of its more fluid portion.

It has also been supposed that there is a constant and natural oozing away of the seminal fluid secreted in excess, but I consider this idea quite as improbable as the former. In cases where this loss of secretion has been observed, it has undoubtedly been the result of morbid action. Again, the fallacy of supposing accumulation of testicular fluid in the vesiculæ is analogically demonstrated in the instance of the elephant, and some other animals, by the separation of the two sets of organs, which are placed in such different positions that no communication whatever can subsist between them.

The function of the testicles is the secretion of a slightly opaque, whitish mucus, which fills up the tubuli of the testis, the vasa efferentia, epididymis and vas deferens, and is the actual fertilizing fluid *par excellence*, requiring only conveyance to the ovule of the female ovarium to accomplish fecundation. Of the ultimate destination of this fluid, and its mode of action, our knowledge is limited to a few facts. We know, for example, that fecundation cannot take place in the female without it, and, judging from analogy, probably without its actual contact with the ovum ; that a suspension of its production in the male causes an arrest in the capability of procreation, and that the removal of the testes effectually takes away that power. Beyond these known phenomena we enter for our explanations upon the domain of metaphysics.

Floating in the mucus contained in the tubuli seminiferi are to be found the spermatozoa. The spermatozoa are the distinguishing element of this secretion, and determine its identity. They exist in more or less abundance, and as on them depends the accomplishment of fecundation, so they become the proof of the conditions of health in the generative organs. They are not present in the seminal tubes before puberty, and they diminish with the failing powers of age, attending most intimately on the period of virility. Under some forms of disease they also disappear, and their absence is characterized by impotence.

If there be few of these animalcules existing in a large mass of fluid submitted to microscopical examination, the demonstration of their presence is difficult, a circumstance which may probably have led some observers to doubt their existence. But when brought under the eye they are easily seen, and with a comparatively low magnifying power. Donné, in speaking of some of their characteristic peculiarities, has drawn a distinction between them and the infusoria (sometimes found in the urine), on which he has based a suggestion of importance, in relation with their discovery in that fluid in cases of suspected spermatorrhœa. After remarking on the facility with which the infusoria are destroyed, he mentions the remarkable power of resistance to different sources of destruction possessed by the spermatozoa, as is illustrated by the preservation of their form after boiling, and their remaining uninjured in putrid urine for an indefinite length of time.

The internal structure of these beings has not yet been detected on account of their minuteness, but their outline is well defined. The form of the body is an oblong cylinder, swelling slightly in the middle. From the anterior part of this body projects a slight eminence, which appears from its situation to be the head. The tail is of great length, being at least ten times that of the body, and tapers to a very acute point, the place of its junction with the body being well marked. Whilst swimming about in the fluid, which they do with great vigour, the tail is thrown into waves, and the body is made to advance by a spiral motion. They turn readily out of the way of any obstruction, but they have not the backward motion of vibriones. The nature of the cause and existence of these curious beings is involved in considerable mystery, and the mode of their propagation in the seminal tubes is not easy to explain. The source of their nourishment, for without nourishment they could not live, raises a highly interesting question. That they have independent existence there can be no doubt, and that their lives may be sustained under suitable circumstances, away from the situation of their first production, there is abundance of evidence. They have been found alive in the uterus and Fallopian tubes twenty days after ejection, and yet their nourishment must be derived from the vital fluid, and probably therefore by its constant destruction.

Jourdan, speaking of the parasites of the human body, and the spermatozoa have an existence analogous at least to that of such parasites, says :—" In fact, as infusory animalcules appear wherever conditions favourable to their development are present, the same takes place in living man. The most important of these conditions seems to be a degree, however feeble, of decomposition, such as is observed in a normal state in the excretions, or as a pathological phenomenon in some of the liquids of the body." (*Encyclopédie Anatomique, tome* ix. p. 395.)

Henlé conceives spermatozoa to be possessed of an extraordinary amount of vitality, for he states that he has seen motion taking place in tails, separated and lying apart from their bodies. I have often seen separated tails, but I never detected in them any appearance of motion. Wagner noticed (*Elements of Special Physiology*) " on one or two occasions, the caudal end of the body to be double, bifid, or forked, and once, too, the body appeared to be double, as in a bicephalous monster." This latter occurrence I have also seen, and I felt at the time inclined to refer it to that mode of propagation, known as *gemmation,* so general among the polypes and infusoria. In the single instance in which I observed this phenomenon, the two bodies were connected together at the seat of junction of the body and tail. The younger, which was slightly the smaller, was joined to the elder by a very short footstalk, and appeared to be ready to separate. To this circumstance, namely generation by gemmation, as well as the fact of finding separate tails, I am inclined to refer for an explanation of the presence of several bodies in the seminal fluid, unfurnished with tails, but nevertheless endowed with the power of motion. Most of the species of infusoria have the remarkable power of propagation by gemmation, as well as by ova, and I have an impression that the same happens with regard to the spermatozoa. I am not however inclined to urge this idea very strongly, merely on the strength of a single observation, though I consider it sufficiently worthy of attention to justify further examination into the question. Donné has given drawings in his *Cours de Microscopie* of spermatozoa taken from the dormouse, from which it would appear that reproduction by gemmation does actually take place.

There are other bodies met with in the seminal fluid—namely, the spermatophori. These are supposed to be the source whence the spermatozoa are derived, and consist of compound cells of different magnitude, containing within them a granular substance. Kœlliker pursued the subject of the evolution of the spermatozoa through various gradations of the lower animals, extending his researches upwards to man. He arrived at the conclusion that the spermatophori are the source whence the spermatozoa are evolved, and this evolution he has detected in the human species.

Such an investigation however is surrounded with difficulties, and with no small amount of uncertainty. Wagner demonstrated the same evolution from the spermatophori of birds. By the aid of analogy and on such authority, therefore, we must consider the evidence of this one mode of reproduction of the spermatozoa as determined, but there is no reason for supposing that reproduction by gemmation may not also occur. Indeed where such constant change in accumulation and diminution is taking place in the quantity of the semen, and the spermatozoa are thus liable to destruction, it is natural to infer that the means of their reproduction would be secured by every safeguard that nature could supply for that purpose.

Besides the spermatic animalcules and spermatophori, there are also found in the fluid of the testicle minute glistening atoms, which have been supposed to be the earlier stages of development of the spermatophori.

From these observations we may conclude that much has already been accomplished towards a knowledge of the development and purposes of these remarkable animalcules. But there are still many points requiring more accurate elucidation, particularly the question of structure. Some physiologists of the present day doubt even the separate vitality of the spermatozoa. The improvements of the microscope, and the greater distribution of that instrument, with the necessarily increased facilities of manipulation, will however tend by degrees to put all doubt on the subject out of the question, and clear up all our present difficulties in respect of this interesting physiological inquiry.

CHAPTER III.

PATHOLOGY OF SPERMATORRHŒA.

THE term spermatorrhœa means simply an involuntary discharge of seminal fluid. The disease intended to be represented is more than this, since it is characterized by a series of consecutive symptoms, more or less important, developed in the constitution of the sufferer, and of which an involuntary discharge of seminal fluid is only one, but at the same time the chief of these symptoms. It is seldom that the malady depends merely on the derangement of a single organ; the different portions of the genital apparatus participate in a general irritation, and constitute essentially the disease. In a state of health the genital organs have a combined dependence on each other, and when diseased they are capable of exercising a separate influence in the aggravation of particular symptoms. An observation of the results of disease on separate parts of the genital system leads me to conclude that the structure and function of each organ may be affected independently of the rest. When a single organ alone is deranged, the disease presents the simplest form of spermatorrhœa.

With a complication of independent actions it is not surprising that symptoms which arise apparently from the same cause should assume opposite forms in certain cases. Many interesting and remarkable circumstances of this kind have occurred to me in practice, and the necessity for determining their relative influence, and satisfactorily referring them to their proper origin, led me in the first place to contrive some mode of classification. With this intention I constructed the following table, which has proved of essential service to me in enabling me to refer to their proper source many of the peculiar symptoms of spermatorrhœa.

A primary division of the disease may be made into the two forms of Tonic and Atonic, under the designation of SPERMATORRHŒA STHENICA, and SPERMATORRHŒA ASTHENICA. Following the arrangement of the table, it will be seen that the sthenic and asthenic condition of the same organ occasions in it different modifications of disease, in proportion as the symptoms that result are varied by the peculiar influence of structure and function.

SPERMATORRHŒA STHENICA.

[Spermatorrhœa Entonica—Mason Good.]

	STRUCTURE.	FUNCTION.
Testes . .	*Orchitis* . .	Excessive secretion; relative deficiency of spermatozoa.
Vesiculæ Seminales	*Vesiculitis* .	Excessive secretion; with inspissation.
Prostate Gland .	*Prostatitis* .	Excessive secretion; increased amount of salts.
Urethra .	*Urethritis* .	Excessive secretion of mucus.

SPERMATORRHŒA ASTHENICA.

[Spermatorrhœa Atonica—Mason Good.]

	STRUCTURE.	FUNCTION.
Testes . .	*Atrophy* .	Impotence; watery secretion; absence of spermatozoa.
Vesiculæ Seminales	*Irritability*	Watery secretion.
Prostate Gland .	*Chronic Irritation* .	Diminished secretion and salts; deposit of calculi.
Urethra .	*Ulceration* .	Purulent discharge.

It cannot be admitted as a necessary law of healthy individual existence, that the organs of generation should be brought into exercise. The functions of the body may be carried on perfectly well without their employment. On the other hand, taking society as at present constituted, and considering the large amount of nourishment usually taken into the system, it must be allowed that the moderate use of the generative organs is perfectly consistent with the highest degree of health. By moderate use of this function, and by the healthful activity which accompanies its exercise, the general system is, to a certain extent, relieved and lightened, and the tone both of mind and body improved. The too frequently repeated exercise of this function on the other hand, is apt to occasion an unhealthy state of excitement of the organs, which is prone to terminate in disease. After a time the morbid excitement, assuming by continuance a chronic character, takes on an action independent of its cause, progresses gradually, and occasions a constant secretion of seminal fluid. The exhaustion proceeding from so abnormal and constant a drain upon the powers of the constitution, quickly undermines the most vigorous strength, and establishes a state of serious disease.

The secretion of the seminal fluid, destined for the important purpose of preserving the species, demands for its perfection, if not the highest, at least a high standard of vital energy. Its excessive loss, for the same reason, occasions an immediate and destructive impression on the health. This symptom, therefore, as the most obvious, and apparently the most dangerous, will naturally attract the attention of the medical practitioner, and probably induce him to direct the entire of his efforts to accomplish its removal. Lallemand based his system of classification on the character of the emissions, dividing them into *nocturnal* and *diurnal.* A careful consideration of the importance of the symptoms he has attached to each division, shows that the idea these terms convey does not clearly define his meaning. His arrangement resolves itself more into a question of degree, among a certain set of symptoms, controlled by peculiar circumstances, than of difference in the pathological conditions of the structures affected.

Emission is nothing more than the effect of some previous condition of stimulus or excitement. The classification of the species of spermatorrhœa, by the variations of this one symptom, even though that symptom be most important, must create uncertainty as to the part of the apparatus to which the seat of the morbid action should be assigned. Nocturnal emissions, arising from excessive activity of the organs, are looked upon as showing the first stage of the disease. They are attended with all the evidences of the normal state, by erection, and by venereal extasy. They are to be attributed to the reaction on the brain of the local nervous excitability, occurring either during partial sleep, or in active conditions of the imagination. Diurnal emissions, on the contrary, are marked by an absence of venereal desire and extasy, by an absence of spermatic fluid, and an equal absence of erection, and all sthenic condition.

A division has also been proposed, characterized by emissions occurring in the same individual both by day and night. This cannot, however, be received as a clearly separate state, but rather as combining the different stages of the two former conditions, or, perhaps, more correctly, the stage of diurnal emissions accompanied by occasional erection of the penis. But these terms, nocturnal and diurnal, evidently do not express the conditions of the affected parts with sufficient precision. The structural and functional differences are capable of more exact discrimination, and are sufficiently distinct to enable us to estimate the symptoms separately, as depending, for example, on affections of the testicles, vesiculæ seminales, prostate gland, or urethra.

Before proceeding to the separate consideration of these latter forms of the disorder, it may however be well to remark, that the laws by which the spermatozoa are governed differ altogether from those affecting the structures or functions. The existence of these animalcules is independent of the functional power, independent even, as I have already pointed out, of the place of their production; and they may be present or absent, for reasons quite irrespective of the healthy condition and fertilizing quality of the semen. So long therefore as disease of the testicle produces no essential change in the quality of the secreted fluid which affords them nourishment, the spermatozoa will continue to be reproduced at about the same average rate. As, however, the quantity of the fluid may be largely increased by excessive action, without any material change in its character, so will it happen that the number of spermatozoa in relation to the bulk of the secretion may be diminished.

SPERMATORRHŒA STHENICA TESTICULÆ.

Sthenic spermatorrhœa, arising from disease affecting the structure of the testicle, is attended with inflammatory symptoms more or less acute. The testicles are swollen and painful on pressure, a sense of weight extends along the spermatic chord, accompanied usually with pains in the loins, and with all those symptoms which constitute an ordinary attack of inflammation of the testicle, or orchitis. It seldom happens, however, that orchitis, originating in this way, is attended with resolution of substance and purulent deposition, even although the early stages of the inflammatory action be attended by a considerable amount of severity. The function of the testicles is greatly stimulated by the excitement, and the secretion of spermatic fluid is largely increased. The peculiar influence of this excitement is shown by erection of the penis and emissions, and I have observed that so long as spermatic fluid, possessing a fecundating power, is secreted by the testicles, its emission is constantly attended by erection.

SPERMATORRHŒA ASTHENICA TESTICULÆ.

When the sthenic state has existed for some little time, a material change takes place in the symptoms, with respect to structure and function. The activity that characterized the earlier stages of the disease gives place to a condition of atony, and loss both of substance and power ensues. This is the spermatorrhœa asthenica. The orchitis is relieved, in proportion as the structural excitement ceases, but function is sacrificed at the same time. The testicles begin slowly to diminish in size as their structure is absorbed, and they become flaccid and shrivelled. The spermatic secretion assumes a watery character, gradually ceasing altogether, and the spermatozoa disappear. This condition of the function of the testicle is quickly followed by complete impotence. Severe and dangerous effects to the constitution naturally accompany these changes. The brain and nervous system, on which the testicles depend for their activity, are continually being exhausted by efforts for the restoration of the functional power of the latter, and the constitutional symptoms assume characters of the highest degree of irritability.

SPERMATORRHŒA STHENICA VESICULÆ.

The vesiculæ seminales are differently constituted, in reference to their morbid phenomena, to the testicles. The results of excessive action in them are the direct opposite to those produced by irritation of the testicles. They have no special function to perform dependent upon nervous influence for its completion. Their secretion is only an important accessory to that of the testicles. The injurious effects to the constitution, of diseases affecting them, are seldom first shown by impressions on the nervous system. Their irritable activity increases with the continuance of excitement, and instead of being relieved by the excited function, they acquire a permanence of morbid action, by which the constitution is seriously undermined.

The sthenic state of spermatorrhœa in relation with the vesiculæ seminales is attended with inflammatory action, as shown by the excitement of those organs, though this inflammation does not rise to any high degree of intensity. I have designated this state by the term *vesiculitis,* meaning thereby an inflammatory condition of the structure of the vesiculæ. It is attended by a sensation of dull pain or aching at the back of the bladder, becoming more painful as the latter organ is distended with urine. The effect of inflammation on the function of the vesiculæ is an excessive increase in the quantity of their secretion, which escapes under almost every sudden contraction of the surrounding muscles.

The coats of the vesiculæ are thin and fibrous, and admit of an active exosmosis. Inflammation sometimes increases this exosmosis, and by that means the fluid portion of the secretion is more rapidly removed, the consequence being inspissation of their contents to a degree amounting occasionally to almost complete solidification. When this happens to any great extent, and the cellules of the vesiculæ become much distended, their structure is liable to undergo destructive absorption.

A less degree of inflammation often occurs, by which the secretion, instead of preserving its pure transparent condition, assumes the appearance of pus.

SPERMATORRHŒA ASTHENICA VESICULÆ.

After inflammation of the vesiculæ has lasted for an uncertain time, the active symptoms gradually cease, leaving behind an atonic or asthenic condition. This condition is associated with irritability, in a greater or less degree, and the functional result is the production of a watery secretion, and a gradual diminution in the quantity of that secretion. Impotence may arise from this cause, without an actual deterioration of the fecundating fluid of the testicle, although it is rare for one of these diseased states to happen independently of the other.

When the vesiculæ have become distended with secretion, either naturally or under excitement, their evacuation may be attained by the contraction of their coats, or by the mere physical effect of excessive distension, by pressure from repletion of the rectum, contraction of the levatores ani muscles, or compression of the viscera of the pelvis, occasioned by the position of the body, as in sitting. These effects, it is evident, may take place independently of disease, and if rarely called into exercise, we should hardly look for serious effects from them alone. On the other hand, if the evacuation take place frequently, more or less serious effects will result from its repetition, for we may be sure, whether the cause be morbid or otherwise, that so unnatural a mode of evacuation could not take place without the presence of a morbid cause. The simple emission of this fluid can have little or no effect upon the constitution of the patient, but the debility and exhaustion which succeed are occasioned by the often repeated nervous excitations, or efforts which are rendered necessary for the restoration of the lost secretion. It is therefore very unwise to consider and to treat the mere ejection as the actual disease.

The nervous phenomena here referred to are not those which accompany a state of healthy stimulus, but are the direct effect of that morbid state termed irritability. A continuance of this morbid condition would lay the foundation for the destruction of the organs themselves, and so much of the general system as might be brought by sympathy under the same morbid influence. The muscles in these cases become wasted, the quantity of blood diminishes, it loses its red globules, and the digestive organs and their secretory glands undergo a gradual but total derangement. These conditions usually come on slowly, and without the demonstration of any very sudden symptoms. Should they continue long the vital power will be exhausted, and the constitution laid open to the invasion of still more acute and serious disorders.

SPERMATORRHŒA STHENICA PROSTATÆ.

The prostate gland is liable to numerous and complex changes, by which the symptoms affecting it, and depending peculiarly on spermatorrhœa, are very apt to be obscured. Like the other associated organs, however, it is subjected to sthenic and asthenic conditions; the first of which, exhibiting all the evidences of inflammation, I have named *prostatitis*. The structural effects of the disease are the same as those accompanying excitement of the prostate gland, arising from other causes. In the active form of the disease abscess of the prostate is liable to take place, and the presence of that affection is evinced by a discharge of purulent mucus. The functional activity of the organ is much increased under the influence of morbid irritation, and there is a copious production of mucus containing a superabundance of phosphatic salts. The quantity of these salts varies considerably under different circumstances, independently of alterations in the more fluid portions of the secretion; and these variations generally indicate some peculiarity in the progress of the disease, while the immediate effect of extreme dilution of the prostatic mucus is that of rendering its neutralizing power insufficient for the preservation of the fecundating fluid against the destructive reagency of mucic and other acids present in the urethra.

Concentration of the prostatic fluid may also take place to such an extent as to permit the formation of crystals of phosphate of lime, which give rise to much irritation, both in the gland itself, and to the mucous membrane of the urethra in its passage along that canal. To this circumstance, as it appears to me, some of the forms of blennorrhœa may be referred; such as that which consists in a discharge of thick greenish yellow mucus, and is independent of any impure origin.

SPERMATORRHŒA ASTHENICA PROSTATÆ.

In the asthenic morbid state of the prostate gland, the effect taking place is an irritability, which may be termed chronic, as distinguishing it from the active irritability accompanying the inflammatory condition of prostatitis. The gland loses its power of producing healthy mucus ; the secretion becomes watery and diminished in quantity, and the salts remain behind in the ducts, and there aggregate and form calculous concretions. Chronic irritability most generally occasions enlargement of the gland, with the production of impediments to the free passage of urine.

The symptoms indicative of disease of the prostate gland are commonly felt in the region of the neck of the bladder, and the lower part of the rectum.

SPERMATORRHŒA URETHRÆ.

The mucous membrane of the urethra must necessarily have a place in any system of classification of the common phenomena of spermatorrhœa. It may be, and undoubtedly is, difficult to point out positive evidences of the presence of this disease in the urethral membrane, but we must not on that account be deterred from their investigation and consideration. There are two important and distinctive states which constitute the foundation of a classification of the diseases of this part—namely, urethritis, and ulceration of the mucous membrane; the former representing the sthenic, the latter the asthenic condition. Urethritis is attended with more or less, generally a considerable, discharge from the mucous membrane, and all the symptoms of acute inflammation. From the inflamed membrane irritation may be propagated throughout the whole of the generative apparatus, producing peculiar effects in each separate portion.

Ulceration of the mucous membrane of the urethra indicates a condition of depressed nervous energy, in which most of the surrounding organs participate, to the destruction of their natural sensibility.

Having thus examined the diseased conditions of the different portions of the genital apparatus separately, I must remind the reader that such states of complete isolation rarely or never occur in practice. On the contrary, it constantly happens that the whole of the associated organs, without exception, are involved in one confused assemblage of symptoms, which will require much care to disentangle and distinguish with accuracy. The due reference of each symptom to its proper source, and a knowledge of the diseased alterations of each portion of the genital system, constitute in reality the pathology of spermatorrhœa.

CHAPTER IV.

IMPOTENCY.

THE subject of impotency has been partially discussed when considering the condition of the testicles, under the head of asthenia of those organs in my table of classification. That reference was more particularly directed to functional incapacity, resulting from alteration of structure of the testicles, and consequent change in the constitution of the seminal fluid, such change being induced by spermatorrhœa.

Impotency, such as I am now about to direct attention to, has, however, an existence altogether independent of the above disease. It consists in an imperfect development of the generative power, or its partial or complete abnegation; the former succeeding to a defective organization of the apparatus of generation, the latter to an asthenic alteration in the condition of the same parts; the result of the presence of these conditions being an incapability of propagating the species. This definition of the term gives a wide scope for the introduction of collateral causes, and points out many minute circumstances capable of exciting the malady.

The most remarkable character connected with this disease is, that the organs of generation are rendered unfit for the performance of their natural functions without the exhibition of an amount of diseased action equivalent to the incapacity which succeeds. This character appears to be occasioned by certain imperfections and gradual alterations in structure of the parts themselves, by which the generative function becomes arrested.

The fact which I have mentioned in a former portion of this work, of the independence of individual healthy existence of the function of generation, is exemplified in the perfect state of health which may coexist with an incapability of procreation. The active performance of this function demands that an amount of nervous influence should always be in readiness for the purpose of properly developing its effects; but this nervous influence may not be called into action. The expenditure of this influence, on the other hand, would occasion those inroads upon the constitution which, in spermatorrhœa, arise from the frequent repetition of the nervous phenomena.

Imperfect organic development, as occasioning impotency, presents us with extreme conditions, though at the same time the states of the disease are so definite, as almost always to enable us to form an immediate and correct judgment as to the result. Thus, when the defective organization is the consequence of amputation, or serious injury to the penis, of non-evolution of the testes, or of defect in any other of the generative organs, the nature of the case itself forbids every chance of success. Other impediments admit of removal, such as phymosis, incurvation of the penis from shortening of the frænum, and partial occlusion of the orifice of the urethra. The knife or the caustic, under such circumstances, offer ready means of relief.

Asthenic impotency shows itself by a deficiency of power in the generative act, and assumes gradually a state of more or less complete incapacity for reproduction. This disease is brought on by several causes, one of the most influential of which is a natural diminution of power, resulting from inactivity of the generative function. It results also from exhaustion of power, following excessive indulgence in a life of debauchery; and it may be the consequence of paralysis of the nerves of the generative organs. When impotency arises from causes of such powerful influence over the constitution, the treatment naturally offers considerable difficulties, but the case is far from being incurable.

The same phenomena sometimes follow from blows on the loins, and from other means of concussion to the spinal chord.

The principle of treatment in this affection is very obvious. The disease is attended with considerable loss of power, and once established, continues to exist for that reason; to the restoration of this lost power, all means should be made subservient. General and local tonics, stimulants, and the cold bath, are the modes by which this end may be accomplished; and though they often require considerable time, they will eventually be successful when properly directed, and sufficiently persevered in.

There is a set of symptoms, however, which may as effectually prevent the continuance of the species, and therefore cause impotency, as those I have named, even though the functional power may not be wanting. These symptoms depend *remotely* on circumstances principally affecting the nervous system, and admit of treatment usually with a fair hope of success. The *immediate effects* are occasioned by irregularities in the character of the actual emissions.

The first of these diseases is the consequence of high nervous excitement, developing itself in the structural, instead of the functional, portion of the generative apparatus; producing, in fact, a state of priapism. It naturally happens from this condition of the parts, that the nervous power, which ought to have been supplied for the stimulation of function, is absorbed in the production of structural excitement, and the consequence is a deficiency in emission, and therefore, impotency. The mode of relief in a case of this kind, is to reduce the tendency to excitement pervading the system, through the constitution; to regulate the diet; and relieve structural excitement, by directing its activity to another channel, through the means of increased muscular exertion. If, as sometimes happens, the excitement occurs from some abnormal local cause, it may then become necessary to apply local remedies for its relief.

The venereal orgasm in persons of great nervous irritability is liable to cause such commotion throughout the system, and to stretch to so high a tension the excitement of the brain, as occasionally to induce an epileptic spasm. At the moment of such a seizure, the continuance of other excitations would cease, and with them naturally the condition of excitement, on which the act of proper emission depends. Under such circumstances impotency follows as a matter of course. The frequent recurrence of epileptic attacks so caused would place the life of a patient affected with them in jeopardy, and no doubt the opportunity for such recurrence should be avoided; at the same time I am forced to admit that occasional indulgence in the practice is one of the readiest modes of subduing over-excited irritability of the nervous function. The treatment of this form of impotency consists in reducing the irritation of the system by depletive measures, such as aperients, and a strict regimen.

At the same time let it be borne in mind, that due judgment must be exercised to ascertain whether the excitement may not arise from an entirely opposite cause—namely, from debility of constitution, and an asthenic irritability of the generative organs inducing reaction in the brain. In such a state the plan of treatment will consist in supporting the constitution by tonic and stimulant medicines, and reducing excessive local action by sedatives.

Two other circumstances, namely, that which arises from a too precipitate emission, and that which arises from the opposite condition of a too tardy one, may become causes of impotency; the former from the emission occurring before the female orgasm, the latter from its happening afterwards. The first of these states depends upon a large amount of irritable excitement, so great occasionally as to cause emission before the introduction of the penis into the vagina, the second from deficient excitement. From the latter circumstance it happens that no distinct emission does actually take place, but that the seminal fluid gradually oozes away from the urethral orifice. The nature of these cases so clearly indicates the method which should be adopted in their treatment, that I shall be excused for not dwelling upon them.

Another cause of impotency connected with imperfection in the accomplishment of emission, is a condition of the urethra, by which the seminal fluid is prevented from issuing from its orifice, and is made to pass backwards by a refluent action into the bladder, or in some cases probably is not permitted to enter the urethra at all, on account of swelling of the ejaculatory and prostatic openings. This state may arise from congestion of the mucous membrane of the urethra, from irritability and spasm of the canal, or from stricture. The treatment under these circumstances should be such as to remove the diseased conditions of the urethra, and with them, the effects of this form of impotency would also disappear.

I have thought it expedient to make my remarks on this subject as concise as possible, and avoid repetition; I have therefore merely taken a general view of the principles of treatment. Those which apply to spermatorrhœa, and are more fully detailed in the chapter on the treatment of that disease, will be found to be very generally suitable to the phenomena of impotency.

CHAPTER V.

CAUSES OF SPERMATORRHŒA.

THE knowledge of the precise cause of any given disease is of the first importance to a proper understanding of its treatment and cure. Where the phenomena presenting themselves are obscure, and difficult to trace to their proper source, as in the case of spermatorrhœa, the careful investigation of them, and of their mutual relations, becomes an urgent necessity. Inferences drawn from external appearances are frequently the first and only guide to the cause of the disease. As often happens, also, the indications of spermatorrhœa can only be traced to their true head, through a set of symptoms which, considered as independent diseases, would naturally be referred to a very different origin, and lead away the mind from the supposition that disarrangement of the genital system was indeed their primary origin. Increased difficulty also arises from the moral delicacy of the subject, and from the disinclination that most patients suffering from this distressing malady have to the investigation of a state of suffering, which, in their morbid fancy, is associated with degradation.

The diseases which it thus becomes necessary to look upon sometimes in the light of causes of spermatorrhœa occasionally assume the characters of cerebral and nervous affections, of derangements in the circulating and digestive systems, of congestions of various organs, and excessive general and local debility. These constitutional causes of the disease are numerous, and require judgment in their diagnosis, from the difficulty of determining the relative proportion of the symptoms assignable to a simple disarrangement of the function of any particular organ, and that due to primary disease of the structure of the part.

The brain and nervous system are of all the organs of the body the most susceptible of serious morbid changes originating in this disease; and upon them the first impression of disturbance is most readily shown. The least dangerous, but at the same time the most persistent of these morbid conditions, is simple excitement of the brain, developed by the most ordinary external circumstances, and by the commonest occurrences of daily life. Excitement of this kind increases in importance, in proportion as the mind is subjected for a longer or shorter period to its influence. And although this state must be considered more as a perversion of healthy action than one of actual disease, still it is better to endeavour to effect its removal while in a recent stage, than allow it to acquire a firmer hold on the system. The symptoms now referred to depend on congestion, which, if permitted to continue, will eventually increase to a degree of extreme intensity, and assume all the characters of threatened apoplexy. At other times the irregular distribution of irritability will occasion serious inflammatory attacks, followed by such an amount of exhaustion that the patient often sinks beneath their violence; and unless the symptoms be arrested before they reach this degree of activity they are apt to proceed on to structural disorganization, and then admit of very feeble prospects of relief.

The progress of these psychological conditions may therefore be arranged into three stages: the *first,* and simplest, may be considered as merely a special tendency of the mind to erotic imagination while sleeping or waking, influencing directly the generative system, the state of the brain being healthy; the *second* embraces the effects of congestion and inflammation, the brain being diseased; while the *third* exhibits a state of paralysis, occasioned by structural decay. Constitutional effects, therefore, in relation with the brain, may arise from any circumstance sufficiently powerful to excite that organ into undue action; from unchaste ideas created by the perusal of licentious books; from exciting passions; from close application to study; from long continued attention to business. These conditions affect the brain directly, and bear a sort of self-evidence of their capability to produce diseased action in the genital system. But there are other and more indirect sources whence the same effect is likely to arise, such as violent and excessive exercise, accidental violence, or exposure to extremes of heat and cold. The disease may in short be occasioned by anything that overstrains the mind, or by which the bodily powers are weakened.

Such states of excitement can exist for a very short time indeed without involving in a greater or less degree the other systems of the body that depend for their performance on nervous activity. One of the first among these to participate in the disorder is that of digestion, and it soon becomes necessary to contend against the long train of symptoms which accompany disorder of the assimilating functions. When disarrangement of the circulation, such as is present with an apoplectic tendency, is added to these symptoms, it may easily be conceived that the difficulty of diagnosis is indeed seriously complicated.

Congenital debility is sometimes, though by no means frequently, a cause of asthenic spermatorrhœa. When such is the case, the malady is not very amenable to treatment, but it occasionally happens that a careful and judicious management is of essential benefit, if not in entirely removing the symptoms, at least in modifying them to a great extent, and thus improving the condition of the patient. Even those that are apparently the worst cases sometimes yield sufficiently to awaken hope and confidence in favour of the steady pursuance of a proper course of treatment.

The most frequent local causes of spermatorrhœa are to be found in the urethra. Inflammation seated in its mucous membrane, thence communicated to the prostate gland, and giving more or less evidence of its presence, usually precedes the same condition in the vesiculæ seminales and testes. Inflammatory attacks of this kind are by no means unfrequent, and arise from various causes, among which exposure to cold is not uncommon. In that state the membrane frequently takes on a disposition to active secretion, attended with inflammation, showing itself in the form of urethral catarrh, in the way that cold generally affects the mucous membrane; and the inflammatory action spreads more or less rapidly to the other contiguous structures. This condition is very different from the urethritis and mucous discharge, which arise as a consequence of primary irritation of the seminal organs, occasioned by structural disease, and independent of functional disorder.

The remote causes of spermatorrhœa sometimes take their rise in irritation of the kidneys and bladder. The spread of inflammation from the urinary organs is direct, by virtue of the continuity of the mucous membrane, extending along the surfaces of the seminal secreting organs. The severity of the attack will be usually found less in degree, and more easily treated, in proportion to the remoteness of the local exciting cause.

Next to inflammation of the kidneys and bladder, proceeding from actual structural disease, as a cause of spermatorrhœa, must be arranged irritations excited in these organs, as well as in the urethra, by the abuse of spirituous liquors, the ingestion of certain articles of diet and particular medicines. Strong infusions of tea and coffee, the local action of cantharides, nitrate of potass, and camphor, naturally occur to the mind in considering a list of articles likely to produce excitement of the genital organs, by their local as well as by their constitutional influence on the system.

Venereal excesses are a fertile and common source of seminal disease, but not exactly proportionate to the amount of their indulgence. It constantly happens that an excess which in some persons would occasion only a temporary derangement, would in others be sufficient to establish a permanent and exhausting discharge. Much depends upon the natural excitability of the constitution, and much also upon the predominant tendency to local irritations. If, combined with such a constitutional susceptibility, an attack of gonorrhœa should occur, symptoms of seminal disease more or less complete, seldom fail to be produced. A subsidence of the active symptoms of the disease may and usually does follow upon the disappearance of the gonorrhœa, but this subsidence must not be mistaken for a proof of the complete restoration of the genital apparatus to a state of health. The seminal disease requires only a certain amount of irritation to recall it into a condition of activity. Sometimes, however, the apparent subsidence really indicates that the disease is assuming gradually the passive or asthenic stage, in other words, is passing into a state of rebellious inveteracy.

A condition of the urethra occasioning stricture of the canal may become an exciting cause of spermatorrhœa, and when the local inflammation attending it diminishes to the state usually understood by the term atonic, the abrasion or ulceration which succeeds then continues to keep up the disease.

The prostate gland is also an occasional cause of spermatorrhœa, either from inflammation primarily arising in the texture of the gland itself, or from diseased action induced in it by irritation of the urethra. It is probably not often a primary source of the disease, for reasons incident to its situation and function. When it does become so, the effects produced on the gland are marked by great permanence, and long after irritation of all the surrounding organs has apparently ceased, the prostate seems to contain within itself the elements for a recommencement of the spermatorrhœa. A varicose state of the veins of the prostate is also conducive to sustained irritation in the gland.

The rectum is subject to several diseases, both of a mechanical and structural nature, and its proximity to the vesiculæ seminales naturally influences in a considerable degree the irritations which affect those organs. The close vicinity of the intestine renders its ordinary distension, and the contractions of the levatores ani muscles, active in the production and continuance of the vesicular form of spermatorrhœa, especially when the vesiculæ are more than usually susceptible of irritation. This susceptibility excites the function of secretion, and the pressure or muscular contractions then cause an ejection from the urethra of a quantity of transparent glairy mucus, immediately or soon after the passage of the fæces. The occurrence of this circumstance leads the patient to an attentive examination of his state, and he discovers probably that it is almost constant on going to stool. To the medical practitioner this occurrence will be the evidence of an undue excitement already commenced in the vesiculæ, which, without proper treatment, must end in a permanently diseased action. If the vesiculæ be examined by the aid of the finger at this time, they will be found unusually tense, and distended with secretion, and this condition is accompanied with a sensation of dull, heavy, aching pain. I have observed that the fluid which is then emitted is generally thin and transparent. It differs materially in its characters from urine, for which it is liable to be mistaken, especially as there is frequently a spasmodic expulsion of the last few drops of urine from the bladder, immediately after the passage of the fæces. At the commencement of the disease, the fluid excreted during these muscular contractions contains no spermatozoa, but after a time, when the testicles participate in the excitement, the animalcules become numerous, and the evidence of spermatorrhœa for that reason more distinct. When such effects arise from simple mechanical disease of the rectum, they are generally temporary and removeable, but occasionally sufficiently distressing and weakening to require careful and prolonged treatment for preventing a relapse.

Among the simplest mechanical inducements of irritation are collections of fæcal matter in the rectum, and ascarides. These, however, present no great difficulty in their management. A varicose state of the hæmorrhoidal veins, by causing distension of the structures around the rectum, may also have a large share in promoting the conditions likely to occasion irritability of the vesiculæ, and therefore must be looked upon as a cause of spermatorrhœa.

Diarrhœa, acute and chronic, and dysentery, may also induce excitement of the vesiculæ. When the more important diseases of the rectum become the excitants of spermatorrhœa, the treatment is rendered particularly tedious and complicated, and the disease will depend for its relief upon the progress of the exciting cause. Those structural diseases of the rectum which may be admitted into the list of causes of this disease are tumours, stricture, and schirrus ; and it will be understood at once that causes so persistent offer almost insurmountable difficulties to successful treatment. Happily these serious maladies, as causes of spermatorrhœa, are the exception and not the rule.

The position of the testicles renders them liable to accidental violence, and they are apt, in consequence, to take on sometimes an inflammatory action. Orchitis, or inflammation of the testicle, arising from a blow, from sympathetic action, or from any other cause, readily communicates its excitement to the neighbouring parts, and, by the lining membrane of the vas deferens, directly to the vesiculæ seminales. Should the inflammation assume a chronic character, and continue for any length of time, there is danger of its exciting the structures permanently, and thus establishing spermatorrhœa.

In enumerating the list of causes of spermatorrhœa, structural irritation of the vesiculæ seminales must not be omitted, but a purely independent structural excitement is probably not often fixed in them. When such is the case, it arises in very few instances from actual organic change. Functional excitement, on the contrary, occurs more frequently, and depends upon the general irritable condition of the nervous system. It seldom demands much attention, and will most probably cease entirely as the balance of nervous energy becomes restored.

There is another point of view, however, from which the vesiculæ seminales must be regarded in relation with spermatorrhœa, for though not frequently subject to become the origin, they are undoubtedly the centre around which all the diseased actions of the generative system are apt to congregate. Their structure and functions are such as to render them not easily liable to disturbance; but for the same reason, when really excited into morbid action and disarranged, it is very difficult to bring about a cessation of that disturbance. When once sufficient irritation is established to occasion spermatorrhœa, then the disease progresses independently of the first exciting cause, kept up, indeed, by the participation of the neighbouring organs in the irritation. For this reason it is that spermatorrhœa hardly ever admits of spontaneous recovery, when it has been allowed to obtain and secure a firm hold upon the vesiculæ seminales.

One of the most serious of all the causes of spermatorrhœa, and one which includes in its terrible embrace both the physical power of the constitution and the moral condition of the mind, is self-abuse. This habit is usually contracted at an early age, most frequently at school, and at a time when the moral power is insufficient to oppose the contagion of bad example, or the force of violent and precocious animal passions. Indulgence of this habit under these circumstances ought not, in my opinion, to be classed in the list of moral crimes, as too frequently happens, but rather in that of disease. The principal difficulty in the management and cure of this fatal propensity is the incapability of making the patient, at an early age, fully understand the injurious influence upon the constitution of its after effects. It is not an easy matter to convince him that he is pursuing a course that demands the very strictest attention and counteraction to save him from the most evil consequences to his health. To him the necessity for a strict resistance is quite incomprehensible; he is practising, as he believes, a simple sensual gratification merely, and if at any time it occurs to his mind, that he is doing something which is wrong, the impression unfortunately is so slight as scarcely to occasion him a moment's uneasiness. He relies, perhaps, on his capability of giving up the habit at a later age, before it becomes injurious to his health. In this idea, however, he will find himself sadly mistaken. When the mind has become morbidly directed to this subject, it is continually and irresistibly seeking the means of reproducing its pleasurable sensations. There is no departure from the idea, every moment unoccupied in bodily exertion is devoted to erotic fancies, and even sleep is not exempt from the mental fascination. As the disease increases in intensity, the mind wearies of any direction but *the* one, and however much it may be distracted for a short time, wanders back unconsciously to its morbid train of thought. The expenditure of nervous energy thus carried on, rapidly wastes and enervates the body, independently of the destruction of function which subsequently follows. It is not long under these circumstances before permanent irritability becomes established, and the patient sinks exhausted by all the fearful symptoms that accompany this terrible condition of disease.

Hufeland, in his "Art of Prolonging Life," has so well and so aptly described the effects of this habit, as influencing the duration of life, and his description so perfectly agrees with my own observations, that I have considered it would add to the completeness of my work to introduce his remarks on the subject in this place.

"Of all the means of hastening death, with which I am acquainted, there are none so highly destructive, and in which every baneful property is so much united, as in these. None comprehend so perfectly all the four requisites for that purpose, which I have already laid down; and indeed these melancholy excesses may be considered as the most highly concentrated process for shortening vital duration. This I shall immediately prove.

"The first mean of shortening life was, lessening the vital power itself. But what can more lessen the sum of the vital power within us than wasting those juices which contain it in the most concentrated form, as well as the first vital spark for a new being, and the most powerful balsam for our own blood?

"The second manner of shortening life consists in lessening the necessary solidity and elasticity of the vessels and organs. But it is well known that nothing tends so much to relax, to soften, and to corrupt, as this dissipation.

"The third manner, or more rapid consumption, can be promoted by nothing so much as by a circumstance, which, as appears from the example of all nature, is the highest degree of vital activity; and which, as before shown, is in many beings the conclusion of their whole life.

"Lastly, proper restoration is thereby prevented in an uncommon degree, because that rest and that equilibrium necessary for repairing what has been lost are impeded, and the organs deprived of the power requisite for the same purpose; but, in particular, because these debaucheries have a peculiar weakening effect on the stomach and the lungs, and thereby specifically desiccate the grand source of our restoration.

"To this may be added the danger of imbibing, amid such irregularities, that most dreadful of poisons, the venereal, against which no one is secure who has illicit intercourse with the fair sex—a poison which may not only shorten life, but render it also painful, miserable, and loathsome, and of which I shall speak at more length when I come to treat on *Poisons*.

"I must here mention also several other concomitant circumstances which are connected with this dissipation, and among these, in particular, that of the mental faculties being weakened. It appears that between both these organs, that of the soul (the brain), and those of generation, as well as between the two functions, that of thinking and that of generating, the one spiritual, and the other physical creation, there is a very intimate connexion; and that they both require the noblest and most refined part of the vital power. We find, therefore, that they both act alternately on each other, and have a mutual and contrary effect. The more we strain the mental faculties, the less vigorous will be our power of generation; the more we stimulate the generative power and waste its juices, the more does the soul lose its faculty of thought, its energy, its acuteness, and its memory. Nothing in the world can so much and so irretrievably ruin the brightest mental talents as excess of this kind.

"It may, perhaps, be here asked, what is meant by *excess* in physical love? My answer is, when either sex indulges that passion too early, before the body is completely formed—females before the age of eighteen, and males before that of twenty; when this enjoyment is too often and too violently repeated, which may be known by the following consequences:—lassitude, dejection, and loss of appetite; when one, by a frequent change of object and circumstances, or by the artificial stimulus of spiceries, heating liquors, and the like, excites new desires and the relaxed powers, or makes that exertion during the time of digestion; and, to include the whole in a few words, when one enjoys physical love without marriage: for it is only under the matrimonial tie, which excludes the stimulus of variety, and directs the physical propensity to a higher moral object, that this passion can be physically refined, that is to say, be rendered salutary and useful.

"Everything that has been here said is applicable, in an eminent degree, to *onanism* also; for that forced and unnatural vice increases, in an extraordinary manner, the straining of the organs, and the weakening connected with it; and this is a new proof of the principle I before laid down, that nature avenges nothing so dreadfully as transgressions against herself. When transgressions prove mortal, they are always crimes against nature. It is, indeed, highly worthy of remark, that a dissipation which seems to be so perfectly alike in all its parts should, however, be so different in its consequences, according as it is confined to a natural or unnatural method; and as I am acquainted with judicious men who cannot be fully convinced of this difference, I shall embrace the present opportunity of showing how onanism, in either sex, does infinitely more mischief than natural enjoyment. Horrid is the impression stamped by nature on such an offender! He is like a faded rose, a tree blasted in its bloom, a wandering skeleton. All his fire and spirit are deadened by this detestable vice; and nothing remains but debility, languor, livid paleness, a withered body, and a degraded soul. The eyes lose their lustre and strength; the pupils seem sunk; the features are distorted, and lengthened; the rosy complexion of youth vanishes, and the visage appears of a pale-white leaden colour. The whole body becomes affected, and sensible of the slightest impression; the muscular power is lost; sleep brings with it no refreshment; every movement is attended with torture; the legs can no longer support the body; the hands tremble; aching pains arise in all the limbs; the faculty of thought is deranged, and cheerfulness is banished. The unhappy sufferer speaks little, and as if it were only by force; and all his former liveliness of mind is depressed. A youth endowed by nature with genius and talents becomes dull, or totally stupid; the mind loses all taste for virtuous and exalted ideas; and the imagination is altogether corrupted. The slightest circumstance respecting a female is capable of exciting in him desire, shame, horror, and repentance; and despair of his evils being cured renders his misery complete. The whole life of such a man is a continued succession of secret reproach; painful sensations, arising from the consciousness of having brought upon himself internal weakness; irresolution and disgust of life; and it needs excite no surprise that such an unhappy wretch should at length become a self-murderer; for no man is so much exposed to suicide as the onanist. The wasting of that which gives life, excites disgust of life in the highest degree, and that singular kind of self-murder *par depit* which is so peculiar to the present age. Besides, the powers of digestion are destroyed; the patient is tormented with flatulencies, and the cramp in the stomach; the blood becomes corrupted; the breast is choked up with phlegm; and eruptions and ulcers in the skin, a desiccation and wasting of the whole frame, epilepsy, asthma, slow fever, debility, and premature death, are at length the consequences.

"There is another species of this vice which may be called *moral onanism:* it is possible without bodily pollution; but it exhausts in a dreadful manner also. I here allude to heating and filling the imagination with obscene and lascivious ideas, and a vicious and habitual propensity to indulge in such thoughts. This evil may, at length, become a real disease of the mind:—the imagination is then totally corrupted, and governs the whole soul; nothing is interesting to men subject to it, but what relates to lewdness; the slightest impression of that kind excites in them a general fervour and irritation; their whole existence is a continual fever, which weakens the more, as it always stimulates without gratification. This state may be found, above all, among voluptuaries who have abandoned sensual enjoyment, but who endeavour, by such mental indulgence, to make themselves amends, without reflecting that in its consequences it is almost equally destructive; also in religious celibacy, where mental onanism can assume the mask of fervid devotion, and conceal itself under the appearance of divine rapture and ecstacy; and, lastly, among idle persons of the other sex, who, by novels and the like means, have corrupted their imaginations, and excited in them a propensity which is not unfrequently honoured with the modish name of sensibility; and who, under a stiff and severe outside, indulge often in the lewdest and most dissolute ideas.

"This may suffice on the melancholy consequences of such debaucheries, which tend not only to shorten but to embitter life."

CHAPTER VI.

SYMPTOMS OF SPERMATORRHŒA.

THE symptoms which accompany spermatorrhœa are numerous, and present appearances varying with the nature of the structures involved. These variable symptoms demand our careful consideration and accurate judgment, for it is precisely in the states of irritable action, caused by excessive or defective tonicity, that forms of disease of a different nature simulate each other. Without an exact knowledge of the exciting cause it is quite possible to mistake them, and to do a serious injury to the patient by mistaking them, and adopting consequently a wrong mode of treatment.

A patient afflicted with spermatorrhœa, which has endured for some time, presents a melancholy and dejected appearance; he feels a constant desire for change, as the mere result of restlessness, and he exhibits a strong disinclination for exertion of every kind. The idea of entering into and taking part in the intercourse of society is in every way hateful to him. Seclusion, that he may dwell upon his morbid fancies, is the one object of his care; but this only serves to create dissatisfaction and remorse. He is incapable of applying his mind either to business or pleasure, and experiences a constant and indefinable dread of something about to happen. Even in the very commonest affairs of life he loses self-confidence. His temper becomes irritable; he has not infrequently paroxysms of the most ungovernable rage, occasionally without the shadow of a reason. Contradiction of his opinions, or a doubt of their irrefragibility, cause him sudden attacks of angry violence. He suffers much from fatigue and lassitude, aching in the loins, and general muscular debility, especially of the lower limbs. The surface loses its healthy colour, the skin assumes a muddy appearance, the eyes become dull and sunken, and surrounded by a dark halo; his digestion soon gets thoroughly out of order, the appetite assuming a remarkable degree of capriciousness, selecting the most crude and indigestible articles of diet, and rejecting the most simple and delicate food.

It is requisite to consider the symptoms of spermatorrhœa both as to their constitutional or functional and their local effects on the system. While a sthenic condition of the disease prevails, and is attended with nocturnal emissions, if those emissions arise simply from a plethoric condition of the seminal tubes, they occasion at first no ill effects to the patient. When, however, the state of excitement disappears, that of atony succeeds, and the disease then gradually unfolds itself, altering in the first instance the functional characters of the separate organs of the generative system, and then extending its mischievous and dangerous influence more generally through the constitution.

When a function so important as that of generation becomes excited into extreme and uncontrollable activity, it will not be matter of surprise that the vital power should be drawn away from the other equally necessary but less independent systems. The evil consequences to the latter soon become manifest, and great organic and constitutional disturbance follows.

The function that suffers soonest from the drain on the system is that of the brain and nerves, but it is not long before the heart and stomach sympathize in the derangement, and evince their participation by several serious and alarming symptoms.

The affections of the brain which make their appearance, and result from the disturbance that has been set up in that organ are indicated by giddiness and headache, the latter being principally referrible to the cerebellar region. The power of commanding and controlling the ideas is lost, and much difficulty is experienced in recalling the most familiar subjects of memory. There is also considerable wakefulness, which terminates in general and extreme physical exhaustion.

If there be hereditary tendency to mental derangement, it frequently happens that the cerebral excitement occasioned by spermatorrhœa is sufficient to cause its development. Even where there is no such tendency, the overwhelming influence of long continued cerebral excitement, combined with the disarrangement of the digestive and secerning systems, is apt to induce hypochondriasis or some form of monomania.

In conjunction with these indications of nervous irritability the heart participates more or less quickly, furnishing unmistakeable signs of sympathetic irritation by frequent and long-continued palpitations. The circulation undergoes various changes, giving, in the early conditions of the disease, evidences of congestion; in the advanced stages showing the effects of exhausting influences, as fainting and general anæmia. When the plethoric states predominate, the symptoms occasionally present a very severe character, and assume so completely the appearances of apoplexy as to cause anxiety for the life of the patient. Irritability of nervous power, rather than fulness of blood, must however be referred to as occasioning these results. The diagnosis, therefore, naturally offers many difficulties, not merely on account of the peculiarities of the disease itself, but also from the fact of the symptoms leading away to all appearance from their actual cause.

Under circumstances of such constitutional disarrangement, it cannot be supposed that digestion will be properly performed. The digestive power becomes too feeble to assimilate sufficient nourishment to preserve the strength and bulk of the body, and a gradual and progressive emaciation sets in. The epigastrium becomes tender to the touch, and this symptom is accompanied with flatulence, distension, and spasmodic pains; and all the complicated phenomena of dyspepsia are very soon established. There is a tendency besides to local congestion of the viscera of the abdomen, and the action of the bowels is apt to become irregular, at one time being obstinately constipated, at another thrown into a state of excitement by a debilitating diarrhœa.

The local symptoms of spermatorrhœa present many apparent anomalies having reference to the structural and functional peculiarities of the several portions of the apparatus which happen to be affected. Neither must the effect of temperament be omitted; for some of the more important symptoms of this disease depend probably as much upon the temperament of the individual as upon any other cause for their continuance. These symptoms also are modified in their forms by the sthenic or asthenic condition of the organs affected. One of the earliest symptoms of the complaint is frequent erection with nocturnal emissions. This state so nearly approaches to simple plethora, such as may exist in a healthy condition of the organs, as scarcely to attract attention, except in so far as by its constant repetition it leads on to the more decidedly morbid stages.

Voluptuous ideas are constantly recurring in this excited condition of the organs, which no watchfulness or effort of the mind is capable of banishing entirely, and emissions as constantly follow after every such cerebral excitement, albeit slight in degree. When this condition has become permanent, the patient is alarmed at finding that his capabilities are inferior to his desires; in fact that there is an unaccountable debility of the genital organs at the moment when he might have imagined his power to be greatest. This frequently is the symptom which first arouses in his mind the idea that there must be some serious change taking place in his constitution.

Along with symptoms of this kind there occurs one which I have remarked to be very distinctive of vesicular and prostatic irritation, and one which will be found present in almost every patient in whom sthenic spermatorrhœa exists. It is that during coitus there occurs a sensation of burning and smarting, as the semen escapes into the urethra. This sensation, though a marked symptom of the disease, is nevertheless favourable, when considered in relation to treatment, as it is rarely experienced when the asthenic state has become confirmed. It probably arises from an inflamed and sensitive condition of that portion of the urethra situated around the openings of the ducts, and its intensity is usually an evidence of the actual amount of inflammation in the diseased organs.

After a continuance of the disease for some time, the emissions not only increase in number during the night, but begin to make their appearance also in the day, giving rise to the diurnal emissions of Lallemand. The patient experiences a sensation of weight and fulness in the rectum, with a tendency to bearing down at the anus. There is a good deal of muscular contraction on the passage of fæces; and during or immediately after these contractions, there will be observed an occasional involuntary escape of seminal secretion. This state of excitement gradually increases, until the patient rarely goes to stool without suffering a more or less abundant emission, and as the disease progresses, the excitement of riding or walking is alone sufficient to bring on the same occurrence. As the disease advances further the erections cease; though there still exists an irritable condition of the vesiculæ seminales, with atony of the ejaculatory and prostatic ducts. The consequence of this atony is, that from the patent orifices of the ejaculatory ducts the secretion of the seminal organs is constantly oozing. This loss acts with fearful effect upon the constitution, the mental and bodily powers diminish rapidly, and the most alarming exhaustion becomes established.

The list of local symptoms that attend on a confirmed case of spermatorrhœa can hardly be complete without including within it certain disarrangements that take place in the kidneys and bladder, but which, though attendant upon the disease, may not perhaps be considered as exclusively resulting from it. These ill effects do however occur sufficiently often to render it necessary to include them in the description of its symptoms. They consist of a general excitement of the kidneys, causing them to pour out a considerable quantity of thick, muddy, unhealthy urine; and an irritability of the bladder, inducing a frequent desire to micturate, accompanied with heat and pain in the urethra. The frequent desire to pass the urine becomes exceedingly troublesome, after the symptoms have endured for a short time, especially during the night. Patients are accustomed to refer these attacks to exposure to cold.

In a well-marked case of spermatorrhœa, the urine submitted to examination presented the following characters:—Reaction neutral, appearance thick and muddy, specific gravity 1·23. Having been allowed to stand for some time, a considerable flocculent mucous deposit subsided to the bottom, carrying with it granular urate of ammonia, with some crystals of uric acid. A film, which spread over the surface of the fluid, contained stellæ of the urate of ammonia, with some dispersed crystals of triple phosphate, or ammonio-phosphate of lime. The colour of the urine, after deposition of the sediment, was light brown. On the addition of nitric acid and subsequent evaporation, a large quantity of nitrate of urea was obtained. In other cases of spermatorrhœa in which I have made an analysis of the urine, the contained salts consisted entirely of phosphates. The urine in most of these cases had a disagreeable odour, and became rapidly putrid.

Symptoms such as these I have enumerated, are seldom met with in practice separately, and it is not often that we have to contend with them in any large proportion. When, however, they do come before us in large number, we must do our best to trace them to their source, and determine, if possible, the *causa causarum*, for our guidance to the attainment of cure. On a correct diagnosis our success in treatment must necessarily rest.

CHAPTER VII.

TREATMENT OF SPERMATORRHŒA.

THE treatment of spermatorrhœa is deserving of our most careful attention, and is in reality the sole object to be accomplished by a study of the phenomena of the disease. The scheme of classification proposed in the third chapter of this Essay sufficiently exposes the error of attempting to treat the disease with specifics, since it would be more than absurd to attempt the removal of symptoms arising from causes so diverse, by one uniform mode of treatment, however great its excellences.

The observation of Lallemand, that "the discovery of the sustaining cause of spermatorrhœa is of more importance than the primary one with respect to treatment," deserves consideration in one point of view, namely, in that which seeks to accomplish the purpose of curing the disease, without ascertaining the principles by which the cure is to be effected. The idea will, of course, bear greater proportionate weight with those who consider spermatorrhœa as consisting always of a more or less violent affection of the entire of one set of structures. It must, however, at the same time be admitted, that a knowledge of the particular structure in which the immediate symptoms originate, might furnish us with a very useful indication as to the peculiar influence and direction of the sustaining cause.

A plan of treatment worthy of adoption should have a due regard to the active or passive condition of the parts affected, not merely so far as those conditions may be the evidences of disease, but also in respect of their relation to the natural performance of their accustomed functions. In the one instance, the remedies employed should be competent to subdue action; in the other, they should be calculated, either by direct stimulation or counter-irritation, to promote a condition of reaction in the affected parts akin to a state of health. Our chief endeavour should undoubtedly be, to remove the cause of the morbid symptoms; but we must also consider, that there is usually a remote, as well as a sustaining cause, on which the persistence of those symptoms may depend. The prognosis of spermatorrhœa is not easy. The development of the disease will be rapid, and its duration long, in proportion to the amount of natural constitutional excitement, and the tendency of the system to local irritations. The results will depend materially on the natural powers of the constitution.

I do not intend entering on the question of the applicability of Lallemand's treatment by cauterization, to the various forms of the disease, as arranged in my table under their proper heads. It would appear, however, that in many of his cases the treatment which he has pointed out as next to specific in theory, was frequently unsuccessful in practice, and certainly does not favour the infallibility of discovering and acting upon the sustaining cause alone. The treatment by cauterization proves of the most essential service, where its employment produces the effect of a sufficiently extended counter-irritation. It is particularly serviceable in subacute inflammation of the vesiculæ seminales and testicle. It may be used also with much advantage in those atonic states of the openings of the prostatic and ejaculatory ducts, where there is a constant oozing away of spermatic fluid. The effect in such cases is a certain degree of inflammation, sometimes attended with an escape of blood; and when this inflammation subsides, it frequently happens that the primary excitement of the organs is also subdued.

Lallemand has stated, that the application of nitrate of silver acts only specifically when it is brought in substance into direct contact with the openings of the prostatic and ejaculatory ducts, and that the same benefit has not been obtained by its application in the form of injection. The latter circumstance arises, I believe, merely from the fact of its force being expended on the mucous membrane of the urethra, and not being applied directly to the diseased spot. A careful application of the solution immediately to the part affected may be made to produce an equivalent benefit, without risking the serious effects which sometimes arise from the contact of the solid caustic with the urethra. I am in the habit of applying a strong solution of the nitrate to any single part of the canal by using a curved glass syringe, a catheter in fact with an opening on the back of the curve, near its extremity, the instrument having a small globe of India rubber attached to its external end. The opening is made to pass over every part to which it is required to apply the caustic solution, and a slight pressure kept up on the India rubber globe always brings a fresh quantity of the solution to the opening. Wherever the solution comes in contact with the mucous membrane the nitrate will be almost immediately decomposed, and no longer liable to produce irritation.

The mode of applying the caustic has certainly very much to do with its success, and is the reason probably that there have been so many failures in its employment. When used too freely to the irritable mucous membrane in the neighbourhood of the disease, it is liable to occasion excessive action with severe pain, and sometimes lays the foundation for ulceration. This might naturally be anticipated from the known high degree of sensitiveness which renders the membrane so liable to irritation. Such irritation is generally an evidence of the degree of diseased activity in cases of spermatorrhœa. In whatever form, however, the nitrate is applied, the object to accomplish is just such an amount of action as to induce counter-irritation, without occasioning abrasion and ulceration. On the other hand, an insufficient application of the caustic simply increases the existing inflammation, without effecting any good purpose.

The simple introduction of a catheter is also at times very serviceable, apparently from producing, though to a less extent, a certain amount of counter-irritation in the neighbourhood of the openings of the ducts. The pain occasioned by the introduction of a catheter was taken by

Lallemand as the test of the necessity for the use of the caustic.

The application of cold of a sufficient intensity and prolonged duration is often of great advantage, and when the disease depends on irritation of the testicle can be easily managed. There is much difficulty in applying cold of a proper degree of intensity in irritation of the vesiculæ, on account of the depth in the perineum at which those organs are situated. Cold may also be used as a stimulant, through its power of inducing reaction after a short application. Thus, it is evident that cold may be made useful in two very different conditions of the organs, but a previous discrimination of the cause of the disease is absolutely necessary for its effective employment. For this reason, cold baths and douches are sometimes efficacious in affording relief, and at other times increase the disease materially. The same observations are applicable to the use of hot and medicated baths. It sometimes happens that the most desirable results are produced by their use, while, on the other hand, it occasionally chances that the symptoms are not only not improved, but are greatly aggravated.

Whenever there are evident proofs of local inflammation, benefit is often obtained by the application of leeches, and also by cupping. The good effects of the abstraction of blood are, however, too frequently fugitive; indeed are generally so, unless followed up by an active constitutional treatment.

Blisters to the perineum occasionally prove very serviceable, and in proportion apparently to the intensity of the inflammation which they excite, and the amount of serous effusion which follows their application. The objection raised against them of inducing strangury, can seldom be fairly made, when they are used with care, and removed immediately after sufficient irritation has been effected to cause a plentiful discharge of serum. A piece of muslin, interposed between the surface of the blister and the skin, is generally all that is necessary to prevent this accident from occurring.

When these remedies have failed to effect a cure, a still more severe treatment may be employed for the purpose of accomplishing this desirable object, namely, the insertion of an issue or seton in the perineum. In the case related in the first chapter of this treatise, this plan succeeded perfectly. The formation of an issue by transfixing a fold of skin in the perineum by a bistoury, is not a very painful operation, and is far from being difficult to perform. It may, however, be considered as one of the most effectual means of local treatment, on account of the extensive and permanent counter-irritation which is excited. This proceeding must not, however, be put in practice without great caution, and it is necessary to determine correctly beforehand whether the condition of the parts affected is asthenic or sthenic.

Previously to entering upon the general constitutional treatment of spermatorrhœa it may be as well to examine into the effects of certain medicines, which, taken internally, pass into the blood, and appear to exert a kind of specific influence upon the urethra and its surrounding structures. The applicability of the peculiar properties of these medicines to different forms of the disease has naturally given them a right to be fully considered in any system of treatment to be recommended for spermatorrhœa.

The ergot of rye, or spurred rye, has a remarkable influence on the organs of generation, and renders valuable service in the treatment of their diseases. Of all the classes of remedies having a power of local determination to these organs it has certainly in my hands appeared to effect the greatest amount of good. It must not, however, be used indiscriminately and in every form of the disease, but only in those states which are associated with an asthenic condition. In these cases it seems to have a specific action of its own, in restoring permanently the functions of the generative system, and in relieving the peculiar atony which, in the cases referred to, pervades these structures. The forms in which I have been in the habit of prescribing it are a spirituous extract made into pills, and an infusion of the powdered grains with camphor. The former of these two preparations is the most convenient, but I have not always found it so effective as the latter.

Camphor has a great effect in subduing excitation of the urinary organs, and occasionally proves of much service where the disease is accompanied with irritation of the kidneys and bladder; but, like the ergot, it is a remedy which does not admit of indiscriminate use. Copaiba, turpentine, and the oleo-resins, are other useful aids, but their employment also requires limitation, and they are probably most suitable where the disease has originated in syphilitic irritation of the mucous membrane of the urethra.

Many objections have been raised against the use of cantharides in this disease, some even contending that as an internal remedy it should be totally abandoned; but I do not give my assent to this opinion without further consideration of the matter. In the atonic forms of the disease its use is often advantageous, and it certainly has a special influence over the bladder and urethra that no other medicine possesses; but like, and perhaps more than all other remedies, it requires that the particular cases to which it is applicable should be distinctly ascertained.

When, as sometimes happens, the inflammatory conditions of the organs are attended with pain, especially when the exciting cause is referrible to the bladder, sedatives may be administered with advantage. The best sedative for the purpose is hyoscyamus, because it has no tendency to confine the bowels, and because its employment is unattended with the excitement which follows the exhibition of opium; for this reason also it is preferable to most other narcotics. The addition of a small quantity of ipecacuanha, by arresting in some degree the rapidity of the circulation, renders a smaller portion of the sedative capable of producing the desired effect.

Occasionally the pain increases to such an extent, and appears to be so slightly controlled by constitutional means, as to require a local application. Under these circumstances, the inunction of veratrine and belladonna to the perineum has often the effect of subduing action and relieving pain, when other modes of treatment have proved unavailing.

Gallic acid and tannin, on account of their power of arresting excessive mucous secretion, are useful remedies in this disease, and can be employed to produce their effects constitutionally or by local application.

I must not pass over another local remedy, namely, acupuncture, without a remark, since it has been highly extolled and recommended by Lallemand for the relief of spermatorrhœa. I have had the opportunity of applying it in two cases only, but in both without success. Lallemand's plan consists in transfixing the prostate gland with one or two fine long needles, the stimulus excited by their presence being intended to relieve the morbidly irritated portions of the genital apparatus, as in other forms of counter-irritation.

From the list of remedies I have here detailed, the principle of treatment will be distinctly perceived. There are, of course, practical suggestions that will arise, and present us with reasons for modification, in every case, and by these we must be guided in our selection of the most appropriate plan.

The same general observation bears a more important application in the management of the constitutional evidences of the disease. To the different kinds of spermatorrhœa, excitement of the brain and nervous system contributes a very serious complication. Symptoms of this nature require to be treated by the avoidance of all stimulating food, by following a cooling regimen, and paying careful attention to the bowels. When the nervous disorder arises from a reaction of the excitement of the generative system on the brain, it will be necessary to adopt local, in addition to constitutional, measures. A morbid condition of the brain is sometimes established, which depends for its continuance on the accumulation of a large amount of nervous irritability. This may be relieved most effectually by increased natural stimulus given to the mind, the direction of the thoughts being turned into a train different from its ordinary course; or better still, by the occupation of vital force in active muscular exertion.

The circulating system in cases of spermatorrhœa demands much attention, as many grave symptoms indicating serious disturbance of the heart and large vessels are apt to arise. These attacks, though depending essentially upon the progress and activity of the original disease, nevertheless place the life of the patient in jeopardy by their own peculiar violence. Symptoms of this kind appear to be of so much vital importance, and it is so difficult to separate them from the supposition of structural disease of the parts affected, that they are very likely to deceive both patient and physician, as to the true point whence they take their origin. If the patient should be of a full plethoric habit, with a tendency to cerebral attacks, it will be expedient to remove blood, in quantity proportioned to his general powers or the activity of the disease. This, however, must be done with caution, as the symptoms occasioned by irritable nervous action, resulting from excitement of the genital organs, resemble, in a remarkable degree, those produced by an entirely different cause. As a general rule, instead of diminishing power by abstracting blood, the opposite course must be pursued, of supporting the constitution, and enabling it to meet the constant drain upon its vital resources.

The digestive function is extremely sensitive to exhausting influences existing in the system. In early stages of spermatorrhœa, when the symptoms indicate plethora of the testicles and vesiculæ seminales, the unloading of these organs by emission of their secretions, tends to increase the appetite and promote activity in the performance of digestion. If this mode of relief be too often repeated, it induces an opposite effect on the system, namely, irritability of the stomach. This organ becomes incapable of retaining sufficient food for the necessities of nutrition, and the power of assimilation is also lessened. It then naturally follows that the strength and substance of the body waste with rapidity.

The remedial indication, in such a condition as that I am now describing, is to corroborate the constitution by tonic medicines, such as quinine, gentian, the mineral acids, steel, and to these may be added a regulated use of ordinary dietetic stimulants. A strict regimen should be enforced, but with a reasonable amount of light and digestible food. Care must, however, be taken to avoid the use of spices, and of everything likely to irritate the stomach or occasion indigestion. An excellent means of supporting the constitution under the emaciation that usually follows an attack of this disease is presented to us in a medico-alimentary substance, which has of late years come much into favour, namely, cod-liver oil. Probably no dietetic preparation could be proposed more likely to be serviceable in spermatorrhœa. The oil is not admitted into the treatment with any supposed special medicinal quality, but offers us a concentrated article of diet as a means of nourishment superior to most others we are in the habit of using. It should be taken directly after a meal, twice or thrice a-day. In this way it will be brought in contact with the absorbing and assimilating apparatus, when in their most active conditions. It is readily absorbed into the system, and rapidly supplies the wasting body with nourishment.

The chief objection which may be raised against cod-liver oil is its aptness to occasion nausea, a circumstance which arises partly from the weakened powers of digestion, and partly from the large quantity usually thought necessary to be administered. The objections to this remedy are, in many instances, got over by a preparation which I have found of great value, namely, the cod-liver oil chocolate. It is composed of the purest oil, carefully combined with chocolate in its most agreeable shape. To cover the odour and taste of the oil as completely as possible, various essential oils can be added to the chocolate, by which means it becomes a pleasant article of diet. Prepared in this way, the oil is much less likely to occasion nausea, or otherwise to interfere with the delicate digestion that patients suffering from spermatorrhœa are so liable to experience. The division of the particles of the oil by chocolate, itself a highly nourishing substance, renders the compound very easy of assimilation by the system.

It will be gathered from the remarks I have thus made on the constitutional effects of spermatorrhœa, that whatever be the method of treatment which may appear most fit for adoption under particular circumstances, or whatever the urgency of the symptoms that may arise, I consider the primary cause of the disease ought to be sought after with diligence. In no complaint perhaps is it more difficult to understand the complication of disease which is likely to occur from the commingling of symptoms as they are derived from their various sources.

The treatment of onanism demands more than common care, on account of the serious injury it causes to the strength and constitution of the sufferer. It arises usually at an age and under circumstances in which it is unlooked for and unexpected; and previous to its discovery has often obtained a hold on the individual that renders it more than usually rebellious to treatment. When the habit is once contracted, there is every inducement in the sensations of the patient to pursue it. This habit originates when the mind is not sufficiently developed to comprehend its fatal tendency. When the practice is discovered, the patient should be watched; he should not be left alone; and all opportunity of solitary seclusion prohibited. Careful attention must be paid to diet, and to the regulation of general health. A proper amount of muscular exercise, verging even on fatigue, is to be taken, and for this purpose gymnastic exercises are the most appropriate. The mind should be directed to interesting and absorbing occupation, as far away as possible from its morbid feelings. It is a prevailing idea that the disease will prove of easy self-correction when the mind begins to comprehend the degradation of the habit; and that as the child becomes older, he will leave off the practice of his own accord. Nothing can be more fallacious than this supposition, and the reverse is more generally the case; the demand for the peculiar excitement becomes more urgent, and the moral disgrace lessens in his own eyes in proportion as the practice acquires an ascendency over the mind. The endeavour to stay its progress cannot, therefore, be too prompt or too energetic. With very inveterate cases, it will be found expedient to blister the penis and neighbouring surfaces, in a way to render the continuation of the practice exceedingly painful. This plan is often a means of entirely checking the disease, since it causes sufficient pain and smarting to awaken the patient when he is unconsciously pursuing the habit during sleep.

When spermatorrhœa arises from the habit of masturbation, of which it is commonly the consequence, the most important thing to be accomplished is the removal of the cause. It is quite evident that little can be attempted in the way of treatment until that has been attained. To a certain extent it will be self-relieved, more especially in the advanced stages of atony, occasioned by the constant practice of the habit. The system to be pursued, therefore, for remedying the early stages of spermatorrhœa so contracted, is precisely the same as that advised for counteracting the evil influences of masturbation.

Treating on this subject, Hufeland, to whom I have already had occasion to refer, has laid down a set of rules so applicable to the plan in view, that I feel no apology necessary for transcribing them. Speaking of early life, and the evil habits sometimes acquired at schools, he says:—

"To this period belongs also a very important point in regard to physical education—the guarding against onanism; or, rather, guarding against too early a propensity to amorous enjoyment. As this evil is one of the most certain and most terrible of those means which shorten and derange life, as has been already shown, I consider it my duty to speak a little more expressly of the methods that ought to be employed to counteract it. I am fully convinced that this vice is exceedingly common and highly destructive to human nature; but that where it has once become habitual it is very difficult to be eradicated. People also ought not to imagine that the principal helps against it are to be found in nostrums and specifics, which generally are employed too late; but that the grand object is to prevent onanism altogether, and that the whole art and secret consists consequently in guarding against too early an expansion and excitement of the propensity to amorous indulgence. This is properly the disease with which mankind are afflicted at present, and of which onanism is now the consequence; for this disease may exist in the seventh or eighth year, before onanism takes place. But it is necessary to pursue early measures for preventing the latter, and to attend, in this respect, not to single points, but to the whole education in general.

"According to my observations and experience, the following, when properly employed, are the most certain means to subdue this pestilence of youth.

"1. One must beware, from the beginning, not to give a child strong, stimulating, nutritive food. Many, indeed, when they indulge their children very early with flesh, wine, coffee, and the like, do not reflect that they are thereby laying a foundation for a tendency to this vice. These stimulants, given so soon, hasten, as I have already shown, expansion of the organs. It is, in particular, hurtful to allow children, at night, meat, hard eggs, spiceries, or puffing things, such as potatoes, which, in this way, have a very powerful effect.

"2. Washing with cold water daily, as already mentioned; the use of free air, and light clothing, particularly of the private parts, are also of importance. Close warm breeches often tend to promote this premature expansion; and it is therefore a good rule to give children, during their first years, a loose under-frock, and not to suffer them to wear breeches till a more advanced period.

"3. Do not permit them to sleep on featherbeds, but on mattresses; do not let them retire to rest till they are heartily tired with exercise, and cause them to get up early in the morning.

Lolling in bed in the morning, between sleeping and waking, particularly under warm bedclothes, is one of the greatest causes of onanism, and ought never to be suffered.

"4. Give them sufficient exercise daily, so that their natural stock of vigour may, by muscular motion, be employed and exhausted: for, when a poor child is kept sitting the whole day, and its body retained in a passive state, is it to be wondered at if its vigour, which will and must have vent, should assume that unnatural direction? Let a child or a youth daily exercise his vigour in the open air, by running, jumping, &c., and I engage he will never fall into the detestable vice of onanism. It is peculiar to a sedentary education, in schools and other seminaries, where exercise is confined to half-hours.

"5. Let not the powers of thought and sensation be strained too early. The more these organs are refined and brought to perfection, the more tendency will the body have to onanism.

"6. One should be particularly cautious in regard to all discourse, writings, or circumstances which might tend to excite such ideas, or turn the attention of children to certain parts. It will be highly necessary to divert them from these by every means possible; but not in a manner recommended by some, that is, making these parts interesting to them by explaining their nature and use. The more their attention is drawn to these, the sooner without doubt can they be acted upon by any stimulus; for internal attention to any point (internal contact) is as good a stimulus as external contact; and I agree, therefore, with the ancients, that the organs of generation should not be mentioned to a child before the age of fourteen. Of that for which Nature has not as yet organs they ought to have no idea, otherwise the idea may call forth the organs before the proper time.

" One, also, must keep at a distance plays, romances, and poems, which may have a tendency to excite such sensations. Nothing should be allowed that may inflame the imagination of children, or lead to lascivious ideas. Great mischief has been occasioned to many by reading some of the old poets, or the study of mythology; and, for this reason, it would be much better to begin a child's education with the study of nature, botany, zoology, economy, &c. These subjects can awaken no unnatural propensity, but preserve the thoughts pure, and therefore will act rather as an antidote to anything of the kind.

" 7. One ought to watch, with the utmost care, over nursery-maids, domestics, and others, that they may not ignorantly foster the first germ of this dissipation, as is too often the case. I have met with some instances, where children became onanists merely through the nursery-maids, who, when they cried and would not sleep, knew no other method of soothing them than to sport with their privities. The sleeping together of two ought also never to be suffered.

"8. If, however, notwithstanding all these precautions, this unhappy propensity should be excited, one ought, above all things, to inquire whether it may not be owing rather to disease than to viciousness, to which most of those intrusted with the care of education pay too little attention. All diseases, in particular, which occasion great irritability in the abdomen, if they are combined with an extraordinary sensibility of the nerves, may give rise to this vice, as I know from experience. Of this nature are worms, the scrofula, and plethora of the lower belly, whether it be the consequences of too heating food, or of too much sitting. When there is any suspicion, therefore, of this being the case, one must always begin by removing the bodily cause. Let the unnatural sensibility of the nerves be subdued by strengthening medicines, and without any other helps one may cure this propensity to onanism, or too great irritability of the organs of generation."

Before concluding, I would remark, that in cases of spermatorrhœa, from whatever cause arising, when by proper treatment the patient has been restored to a state of health, no inconsiderable amount of care is requisite for some time afterwards, for the purpose of preserving him in a sound state. When once the important functions of generation have suffered disarrangement, the liability to a return of the disease is very great. However, with a judicious plan of diet, exercise, pure air, and mental occupation, the disposition to disease will be finally subdued, and the patient may enjoy the remainder of life free from every symptom, and even from a dread of the return of so distressing a malady.

THE END.